

**COST COMPONENTS AND PROXIES
FOR THE ECONOMIC FACTOR**
Refer to Section 5.17(a)

LABOR 1.

COST COMPONENT: Non - physician Salaries. Physicians' Salaries and Fees

SHARE COST CENTER: All Cost Centers for which employees salaries are reported; contracted services in MSA, OBS, PED, PSA, ICU, CCU, NNI, NBN, EMR, CLN, and OHS Cost Centers; physicians salaries and fees for all Cost Centers except RSD; and physicians fees for RSD Cost Centers.

PROXIES: BLS, Average Hourly Earnings for Nonsupervisory Hospital Workers, Northeast (97 percent in 1987, and no less than 94 percent in 1988 and 1989)
Percentage change in New Jersey contracted services hourly wage three percent in 1987, six percent in 1988 and 1989. Labor proxies of future years will be adjusted downward to reflect the actual 1988 and 1989 statewide proportion of contracted services if the actual proportion is less than six percent. This treatment will continue for all rate years based on the 1986 base year.

SOURCE: Bureau of Labor Statistics (BLS), Employment Cost Index New Jersey Department of Health survey of contracted services labor costs for 1986 through 1988.

LABOR 2.

COST COMPONENT: Interns, Residents and Fellows

SHARE COST CENTER: Physicians' salaries in RSD Cost Center

PROXIES: Percentage change in average stipend for house staff, Northeast Region, by number of residents per post-graduate year for New Jersey hospitals.

SOURCE: Council of Teaching Hospitals and new Jersey Department of Higher Education

LABOR 3.

COST COMPONENT: Fringe Benefits

SHARE COST CENTER: Other Expense reported in PFB, LFB, and PEN Cost Centers

CATEGORY 1: FICA

Proxy: Percentage change in Social Security Tax Rate compounded by changes in salaries (95%).
Percentage change in Social Security Tax Rate compounded by change in Rate Base (5%).

SOURCE: U.S. Department of Health, Education and Welfare, Social Security Bulletin and BLS, Average Hourly Wages-Hospital Workers (U.S.)

CATEGORY 2: Workman's Compensation

Proxy: Percentage change in Manual Rate compounded by percentage change in salaries.

SOURCE: New Jersey Compensation Rating and Inspection Bureau and BLS, Employment Cost Index

CATEGORY 3: Unemployment Insurance

PROXY: Percentage change in Disability Insurance Rate compounded by Rate Base (90%)
Percentage change in Disability Insurance Rate Compounded by Rate Base and salary changes (10%).

SOURCE: New Jersey Department of Labor and Industry and BLS, Average Hourly Wages-Hospital Workers (U.S.)

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CATEGORY 4: Disability Insurance

PROXY: Percentage change in Disability Insurance Rate compounded by
Base Rate (90%) Percentage change in Disability Insurance Rate
compounded by Rate Base and salary changes (10%)

SOURCE: New Jersey Department of Labor and Industry and BLS, Average Hourly
Wages-Hospital Workers (U.S.)

CATEGORY 5: Medical Insurance

PROXY: Percentage change in New Jersey Hospital Association group rate for
Blue Cross/Blue Shield basic hospital and group major medical
premium rates.

SOURCE: New Jersey Hospital Association

CATEGORY 6: Life Insurance

PROXY: Percentage change for New Jersey Hospital Association group life
insurance premium rates

SOURCE: New Jersey Hospital Association

CATEGORY 7: Pensions

PROXY: ECI, Northeast

SOURCE: BLS, Employment Cost Index

CATEGORY 8: Other Policy Fringe Benefits

PROXY: ECI, Northeast

SOURCE: BLS, Employment Cost Index

SUPPLIES 1.

COST COMPONENT: Office Supplies

SHARE COST CENTER: Supply costs reported in PHY, RSD, A & G, FIS, PCC, EDR,
and MRD Cost Centers

PROXIES: Producer Price Index: (PPI): 0915-05 Office Supplies and Accessories
(33%)

PPI: 0913-0131.09 Paper, Unwatermarked Bond, No.4 (67%)

SOURCE: BLS, Producer Price Index

SUPPLIES 2.

COST COMPONENT: Raw Food

SHARE COST CENTER: Proportion of Supply Costs reported in DTY Cost Center

PROXIES: Consumer Price Index (CPI): Food at home (50%) PPI: 02 less 029,0261
and 0262 Processed food less feeds, less alcoholic and non-alcoholic
beverages (50%)

SOURCE: BLS, Consumer Price Index and Producer Price Index

SUPPLIES 3.

COST COMPONENT: Other Dietary Supplies

SHARE COST CENTER: Proportion of Supply costs reported in DTY Cost Center

PROXIES: PPI: 0915-0333.03 Paper Goods, Hot Cups (24.07%)

PPI: 0722 Unsupported Plastic Film and Sheeting (12.03%)

PPI: 1261 Dinnerware (35.98%)

PPI: 0671 Soap and Synthetic Detergent (27.92%)

SOURCE: BLS, Producer Price index

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APPENDIX 1.3

SUPPLIES 4.

COST COMPONENT: Housekeeping Supplies

SHARE COST CENTER: Supply costs reported in HXP Cost Center

PROXIES: PPI: 0915-01 Sanitary Paper and Health Products (30%)

PPI: 0722 Unsupported Plastic Film and Sheeting (30%)

PPI: 0671 Soap and Synthetic Detergent (40%)

SOURCE: BLS, Producer Price Index

SUPPLIES 5.

COST COMPONENT: Laundry and Linen Supplies

SHARE COST CENTER: Supply costs reported in L&L Cost Center

PROXIES: PPI: 0671 Soap and Synthetic Detergents (60%) CPI: Textile

House Furnishings (40%)

SOURCE: BLS, Producer Price Index and Consumer Price Index

SUPPLIES 6.

COST COMPONENT: Drugs

SHARE COST CENTER: Supply costs reported in PHM and DRU Cost Centers

PROXIES: PPI: 0635 Ethical (Prescription) Drugs (70%)

0636 Proprietary (over the counter) Drugs (30%)

SOURCE: BLS, Producer Price Index

SUPPLIES 7.

COST COMPONENT: Laboratory Supplies

SHARE COST CENTER: Supply costs reported in LAB and BBK Cost Centers

PROXIES: PPI: 138 Glass Containers (40%) PPI: 061 Industrial Chemicals (50%)

SOURCE: BLS, Producer Price Index

SUPPLIES 8.

COST COMPONENT: Radiology Supplies

SHARE COST CENTER: Supply cost reported in RAD Cost Center

PROXIES: PPI: 1542 Photographic Supplies

SOURCE: BLS, Producer Price Index

SUPPLIES 9.

COST COMPONENT: Medical/Surgical Supplies

SHARE COST CENTER: Supply costs reported in MSA, OBS, PED, PSY, ICU, CCU, NNI,

NBN, EMR, CLN, OHS, ANS, CSS, DEL, DIA, EDG, MSS, NMD, ORR,

OPM, PHT, RSP, THR, AND CCA Cost Centers

PROXIES: CPI: Non-Prescription Medical Equipment and Supplies

SOURCE: BLS, Consumer Price Index

SUPPLIES 10.

COST COMPONENT: Repairs and Maintenance Supplies

SHARE COST CENTER: Supply costs reported in OGS and PLT Cost Centers

PROXIES: CPI: Maintenance and Repairs, Commodities

SOURCE: BLS, Consumer Price Index

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OTHER 1.

COST COMPONENT: Repairs and Maintenance Services

SHARE COST CENTER: Other expenses and contracted service costs reported in OGS
and PLT Cost Centers

PROXIES: CPI: Maintenance and Repairs, Services

SOURCE: BLS, Consumer Price Index

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CATEGORY 3: Business Service Equipment

COST CENTER: Equipment costs reported in PHY, RSD, A&G, FIS, MRD, OCG, PCC, and EDR Cost Centers

PROXY: PPI: 1193 less 1193.06 Office and Store Machines and Equipment less Coin-Operated Vending Equipment PPI: 122 Commercial Furniture

SOURCE: BLS, Producer Price Index, weighted by Relative Importance

CATEGORY 4: Diagnostic and Therapeutic Equipment

COST CENTER: EMR, CLN, OHS and all Ancillary Cost Centers

PROXY: Percentage change in hospital equipment cost index

SOURCE: Hospital Equipment Cost Index, Marshall Valuation Service, Marshall and Swift Publication Co.

OTHER 6.

COST COMPONENT: Other Services

SHARE COST CENTER: Other expenses reported in all cost centers except INT, PLT, OGS, MAL, UTC, LFB, PFB, and PEN; other expenses in A&G Cost Center not classified above; contracted service costs in Ancill. lies, exclusive of DEL, ORR, DTY, HKP, MRD, PCC, EDR, A&G and FIS Cost Centers.

PROXIES: Service less rent and medical care

SOURCE: BLS, Consumer Price Index

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Economic Factor Proxies

Please see files for examples of calculations.

1. Labor
Source - U.S. Bureau of Labor Statistics (BLS), Average Hourly = Earnings
of Hospital Workers (SIC 806)
Proxy = percent change in Average Hourly Earnings
2. Residents
Source - Average Residents' Salaries by Post Graduate Year, Northeast, Council
on Teaching Hospitals
Number Residents by Post Graduate Year - NJ Department of Higher
Education

<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>
PGY (1-5)	# NJ Residents	% NJ Residents	% Δ in Residents Pay	Weight (cXd)

Proxy = sum of column e for each of five years, plus 1.

3. FICA
Source - U.S. Social Security Administration, Labor Proxy
Proxy = $.95(\Delta \text{rate} \times \text{Labor} - 1) + .05(\Delta \text{rate} \times \text{base} - 1) + 1$
4. Workers' Compensation
Source - NJ Compensation & Inspection Bureau, Code 9045, Hospitals
Proxy = $\Delta \text{in rate} \times \Delta \text{Labor}$
5. Unemployment Insurance
Source - NJ Department of Labor
Proxy = $.1(\Delta \text{rate} \times \text{base} \times \text{Labor} - 1) + .9(\Delta \text{rate} \times \text{base} - 1) (+ 1)$
6. Disability Insurance
Source - NJ Department of labor
Proxy = $.1(\Delta \text{rate} \times \text{base} \times \text{Labor} - 1) + .9(\Delta \text{rate} \times \text{base} - 1) + 1$
7. Medical Insurance
Source - New Jersey Hospital Association
Blue Cross/Blue Shield - average premium per life covered
Major Medical - average premium per life covered
Proxy = $.9(\Delta \text{Blue Cross/Blue Shield}) + .1(\Delta \text{Major Medical})$
8. Life Insurance
Source - New Jersey Hospital Association
Proxy = % change in average premium per life covered
9. Pensions
Same as Labor
10. Other Policy Fringes
Same as Labor

* Δ = change

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11. Raw Food
US-BLS - Producer Price Index - Table 8, Processed Food
US-BLS - Consumer Price Index - Table 9, Food at Home

Proxy = .5(Δ Food at Home) + .5(Δ Processed Food)
12. Other Dietary
Source - Producer Price Index, Table 6
Soap (0671), Unsupported Plastic (0722), Tableware (1261)
Proxy = .37(Δ Soap) + .16(Δ Unsupported Plastic) + .47(Δ Tableware)
13. Office Supplies
Source - Producer Price Index, Table 6
Office Supplies and Accessories (0915.06)
Paper, Unwatermarked Bond #4 (0913, 0131.99)

Proxy = .33(Δ Office Supplies) + .57(Δ Paper)
14. Housekeeping Supplies
Source - Producer Price Index, Table 6
Sanitary paper (0915.01), Unsupported Plastic (0722), Soap and
Synthetic Detergent (0671)
Proxy = .3(Δ Sanitary Paper) + .3(Δ Unsupported Plastic) + .4(Δ Soap)
15. Laundry & Linen
Source - Producer Price Index, Table 6, Soap & Synthetic Detergent (0671)
Consumer Price Index, Table 11, Household Linens
Proxy = .6(Δ Soap) + .4(Δ Linens)
16. Drugs
Source - Producer Price Index, Table 6
Ethical (Prescription) Drugs (0635)
Proprietary (Over-the-Counter) Drugs (0636)
Proxy = .7(Δ Ethical Drugs) + .3(Δ Proprietary Drugs)
17. Lab Supplies
Source - Producer Price Index, Table 6
Industrial Chemicals (061), Glass Containers (138)
Proxy = .4(Δ Glass) + .6(Δ Chemicals)
18. Radiology Supplies
Source - Producer Price Index, Table 6
Photographic Supplies (1542)
Proxy = percent change in Photographic supplies
19. Medical & Surgical Supplies
Source - Consumer Price Index, Table 11, Non-Prescription Medical Equipment
& Supplies
Proxy = percent change in index
20. Repair & Maintenance Supplies
Source - Consumer Price Index, Table 11, Maintenance & Repair Commodities
Proxy = percent change in index

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21. Repair & Maintenance Services
Source - Consumer Price Index, Table 11, Maintenance & Repair Services
Proxy = percent change in index
22. Contracted Laundry & Linen
Source - Consumer Price Index, Table 11
Laundry & Dry Cleaning other than Coin-operated, Household Linens
Proxy = .8(ΔLaundry & Dry Cleaning) + .2(ΔLinens)
23. Malpractice Insurance
To be reconciled to actual for 1985 and 1986
1987 to be determined
In the past, proxy has been change in the community rate of the Health Care Insurance Exchange (HCIE)
24. Utilities - Electricity
Source - Producer Price Index, Table 6
Electricity, 500kw demand, Mid-Atlantic region (0543-1204.01)
Proxy = percent change in index
25. Utilities - Gas
Source - American Gas Association - Price of gas to Industrial Users, Mid-Atlantic Region
Proxy = percentage change in index
26. Utilities - Oil
Source - U.S. Department of Energy, Petroleum Marketing Monthly
Price of Fuel Oil #2 to Commercial/Institutional Users in NJ
Price of Fuel Oil #4 to End Users, PAD District I
Proxy = .5(ΔFuel Oil #2) + .5(ΔFuel Oil #4)
27. Utilities - Water
Source - Consumer Price Index, Table 11, Water and Sewage Maintenance
Proxy = percent change in index
28. Major Moveable Equipment, Bad, & Nursing
Source - Marshall and Swift, Hospital Equipment Cost Index
Proxy = percentage change index
29. Major Moveable Equipment - General Service
Source - Producer Price Index, Table 6
113 - Metal Work Machinery
1134 - Industrial Process Furnace
1136 - Abrasive Products
1161 - Food Production Machinery
124.02 - Laundry Equipment

The first step is to adjust the Metal Work Machinery (113) Index to subtract out the effects of Industrial Process Furnace (1134) and Abrasive Products (1136). An adjusted index is calculated for both the rate year and the prior year, using annual (or 6-month) averages. The formula for this adjustment is:

$$\left[113 - \left(1134 \frac{rv_{1134}}{rv_{113}} + 1136 \frac{rv_{1136}}{rv_{113}} \right) \right] \left(\frac{rv_{113}}{rv_{113} - rv_{1134} - rv_{1136}} \right)$$

The "rv" refers to the relative importance of the index, which is published in the annual supplement. The annual average is plugged in to the place in the formula containing the index number.

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Proxy = .4118 (Food production machines) + .2353 (laundry equipment) + .3529 (adjusted metal work)

30. Major Moveable Equipment - Business Services

Source - Producer Price Index, Table 6

Commercial Furniture (122), Office & Store Machinery (1193), Coin Operated Vending Equipment (1193.06)

This time, the Office and Store Machinery Index is adjusted to subtract out the effects of Coin Operated Vending Equipment.

For each Year:

$$1193adj = \left[1193 - (1193.06 \frac{rv1193.06}{rv1193}) \right] \left(\frac{rv1193}{rv1193 - rv1193.06} \right)$$

$$Proxy = .6(1193 adj) + .4(122)$$

31. Major Moveable Equipment - Diagnostic & Therapeutic

Same as Bed & Nursing

Source - Marshall & Swift, Hospital Equipment Cost Index

32. Other Services

Source - Consumer Price Index, Table 7

Services Less Rent of Shelter (SLR)

Medical Care Services (MCS)

The index for Services Less Rent is adjusted to subtract out the effects of Medical Care Services. Because the two indices are on different base years, the percent change rather than the index value is used.

$$Proxy = \left[\Delta SLR - (\Delta MCS \frac{rvSLR}{rvMCS}) \right] \left(\frac{rvSLR}{rvSLR - rvMCS} \right)$$

The relative values (rv) are published in the January issue of the Consumer Price Index Detailed Report.

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METHODOLOGY: 1992 AND LATER YEARS

ATTACHMENT 4.

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1992 PROJECTED AND FINAL

ECONOMIC FACTOR

1. Labor - DRI Projection from 3rd Q. 1991 Report for Northeast - 5.7%.
Note: This table has been dropped from 4th Q. 1991 Report forward. Regional AHE of 5.7% over National AHE of 5.8% times the National ECI of 5.8% also yields 5.7%.
2. Residents - For Projected '92-'93 Salaries, five year averages were used.

<u>Residents</u>	<u>Prelim. '91-'92</u>	<u>Projected '92-'93</u>	<u>e</u>
<u>PGY</u>			
1	29,369	30,741	.04672
2	31,177	32,580	.04500
3	32,902	34,350	.04401
4	34,887	36,492	.04601
5	36,224	37,801	.04353

Number New Jersey Residents

'91-'92 PGY

1.	792	.31071	x	.04572	=	.01452
2.	703	.27579	x	.04500	=	.01241
3.	643	.25225	x	.04401	=	.01110
4.	328	.12863	x	.04601	=	.00592
5.	83	.03256	x	.04353	=	.00142
	2,549	1.00000				.04537 - .0454

3. FICA - Same as Labor - 5.7%.
4. Workers Compensation - Same as Labor - 5.7%.
5. Unemployment Insurance - the base increased to \$15,300 for 1992 from \$14,400 for 1991.
Proxy = $15,300/14,400 = 1.0625$.

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6. Disability Insurance - the base increased to \$15,300 for 1992 from \$14,400 for 1991.
 Proxy = $15,300/14,400 = 1.0625$.
7. Medical Insurance - Proxy = 1.20, estimate based on various sources.
8. Life Insurance - Same as Labor - 5.7%.
9. Other Policy Fringe - Same as Labor - 5.7%.
10. Pensions - Same as Labor - 5.7%

		<u>5 Year Average</u>	
		1991	1992
11.	Office Supplies PPI 0915.06	122.2	125.7
			1.0236
12.	Food - DRI 4th Q., 1991 - Table 1 - 2.9.4		

		<u>5 Year Average</u>	
		1991	1992
13.	Housekeeping Supplies		
	0915 Sanitary Paper	137.5	144.3
	0722 Plastic	121.7	125.4
	0671 Soap	1189	121.3
			.04945
			.03040
			.02019
	Proxy = .3 (Paper) + .3 (Plastic) + .4 (Soap)		
	.3 (.04945) + .3 (.03040) + .4 (.02019)		
	.01484 + .00912 + .00808 = .03204		
	Proxy = 1.0320		

		<u>5 Year Average</u>	
		1991	1992
14.	Laundry and Linen Supplies		
	PPI 0671 Soap	118.9	121.3
	CPI Textile H.F.	120.4	123.3
			.02019
			.02409
	Proxy = .6 (Soap) + .4 (Textile)		
	.6 (.02019) + .4 (.02409)		
	.01211 + .00964 = .02175		
	Proxy = 1.0218		

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